

A Review on Billfish Fishery Resources in Sri Lanka

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Abstract

This paper reviews the landings of billfish made in large pelagic fisheries during the period 2010-2012. Sri Lanka has a well established offshore fishery targeting for tuna and tuna like species. Apart from tuna, billfish, sharks and seerfish are caught mostly within the EEZ of Sri Lanka as well as in high seas. The annual production of large pelagic fish in Sri Lanka was 135237 mt in 2012. Although there is no target fishery for billfish, it makes up to 9% of the total large pelagic landings in Sri Lanka. Majority of the billfish which includes three species of marlins, one species of sailfish and one species of swordfish production come from multi-day boats operating offshore fishery. Relatively higher proportion of billfish is being caught using gillnet- longline gear combination. A slight increasing trend in the billfish landings was observed over the period.

Introduction

Large pelagic; tuna and tuna-like species are important fishery resources for food and also have valuable contribution to the Sri Lanka's economy. Fisheries targeting these resources have rapidly developed over the past three decades through technological development as well as expanding fishing range more and more offshore waters. Over 3000 vessels are being currently engaged in these fisheries mainly in offshore waters most of them are multiday boats and also some number of small boats seasonally in the coastal seas. Large pelagic fishery is a multi-gear operation. Among different fishing gears employed, gillnet, long line and gillnet/long line combination are widely used fishing gears in the industry.

Before introduction of multiday vessels operate in offshore waters, billfish landings were quite low and have increased with the development of offshore fisheries since 1980s. Thereafter, catch of billfish increased and realized 20,000 mt in 2001 representing about 30% of the total billfish catch by all fleets in the Indian Ocean.

Five species of billfish which include three species of marlin; black marlin (*Makaira indica*), blue marlin (*Makaira nigricans*) and striped marlin (*Tetrapturus audax*) and single species of sailfish (*Istiophorus platypterus*) and swordfish, (*Xiphias gladius*).are reported in landings.

Billfish is not a target group in any of the local commercial fisheries directed towards large pelagic and come as an incidental catch. Although billfish is not a target group their contribution is substantial and only second to the tuna catch.

This study reviews the billfish fishery in Sri Lanka from 2010 to 2012. Data for this study was obtained from PELAGOS database of the National Aquatic Resources Research and Development Agency (NARA). NARA has directly involved in offshore and coastal fishery data collection and maintained large pelagic fishery database (PELAGOS) since 1994.

Billfish fishery.

Fishing Vessels and gear

Although fisheries for large pelagic are multi fishery the most important fisheries for catching of billfish are gillnet, gillnet combined with longline, deep-water tuna longline and some amount in trolling.

The landings of billfish at present show gillnet combined with longline accounted 55% of the total landings followed by gillnet 28% and longline 16% respectively (Figure 1).

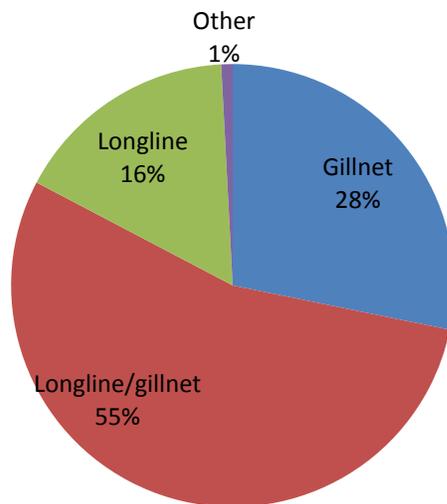


Figure 1: Gear-wise contribution in the total billfish production in 2012

The fishing vessels engaged in offshore large pelagic fisheries which are mostly of 9-15 m in length (Appendix1) have been progressively increased especially after 2005 along with the development initiative launched in fisheries aftermath of tsunami. It has been reported 3999 vessels operated in 2011 but a sudden drop in the active vessel fleet noticed; 2482 in 2012 (Figure 2).

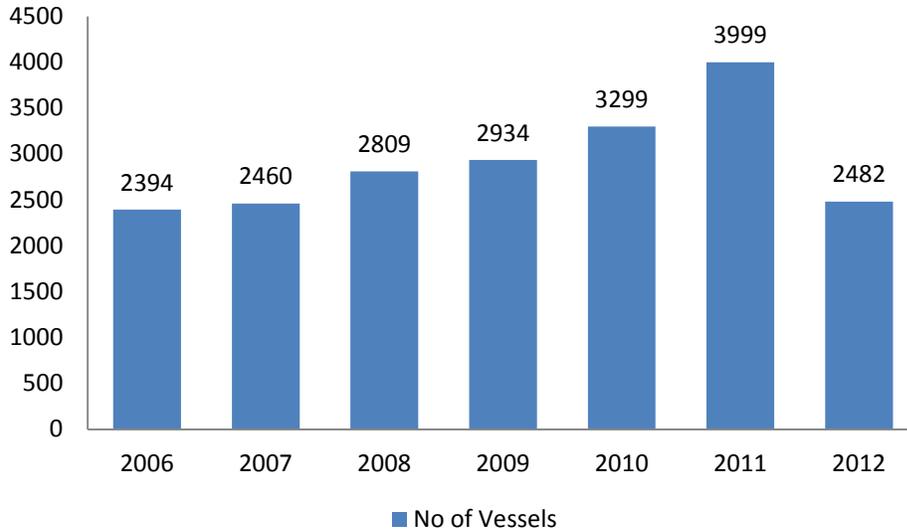


Figure 1: Operating multiday fishing craft (Active vessels) in Sri Lanka (2006-2012)

Source: vessel Registry Unit, DFAR

Billfish production

At present billfish is a non-target species group and majority of the catch come as bycatch. Currently, the percentage contribution of billfish to the large pelagic fish production by weight remains around 9% while tuna has accounted more than 65% to the total large pelagic fish production (Figure 2).

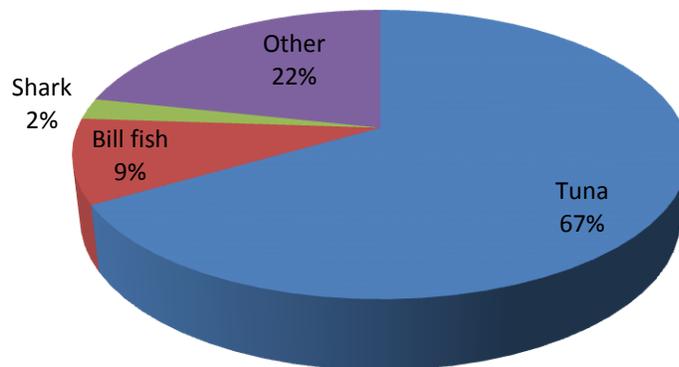


Figure 2: Contribution of billfish to the total large pelagic fish production in 2012

The production of the billfish is only second to tuna production. With the development of the offshore fishery, the contribution of billfish to the large pelagic fisheries has become significant. There is an increasing trend of billfish landings since 2008 to 2012 with a maximum landing of 12440mt in 2010 (Figure 3).

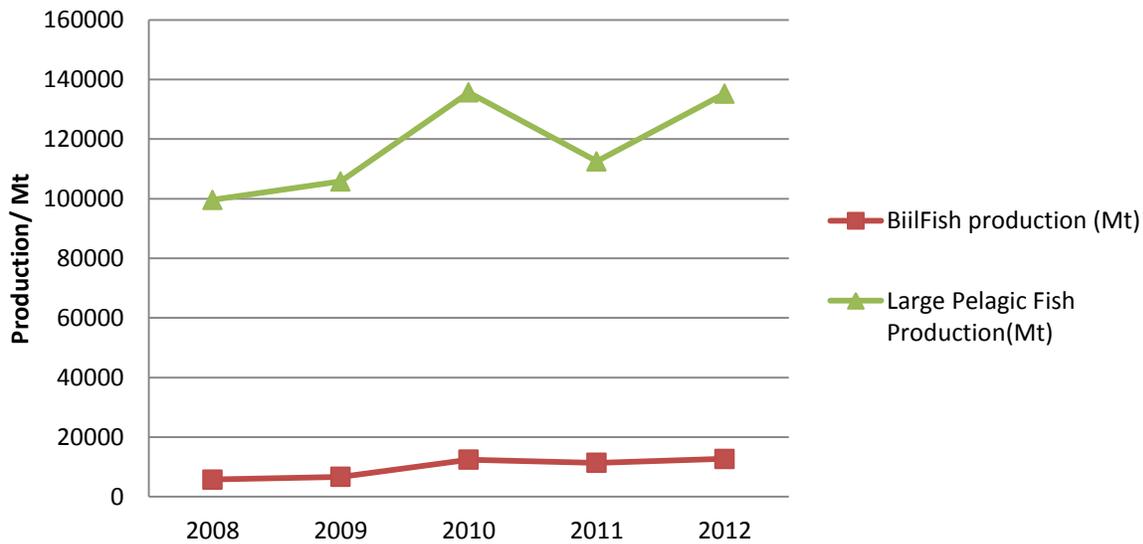


Figure 3: Billfish production vs. total large pelagic fish production; 2008-2012

Billfish landings mainly come from offshore fisheries and it remained over 95% during the past few years (Figure 4). Coastal fishery has less contribution to the total billfish landings.

Sailfish is the major component in the coastal fisheries but some decline has been reported in 2012 (Figure 5). While in the offshore fisheries marlin contributed high proportion by volume (Figure 6)

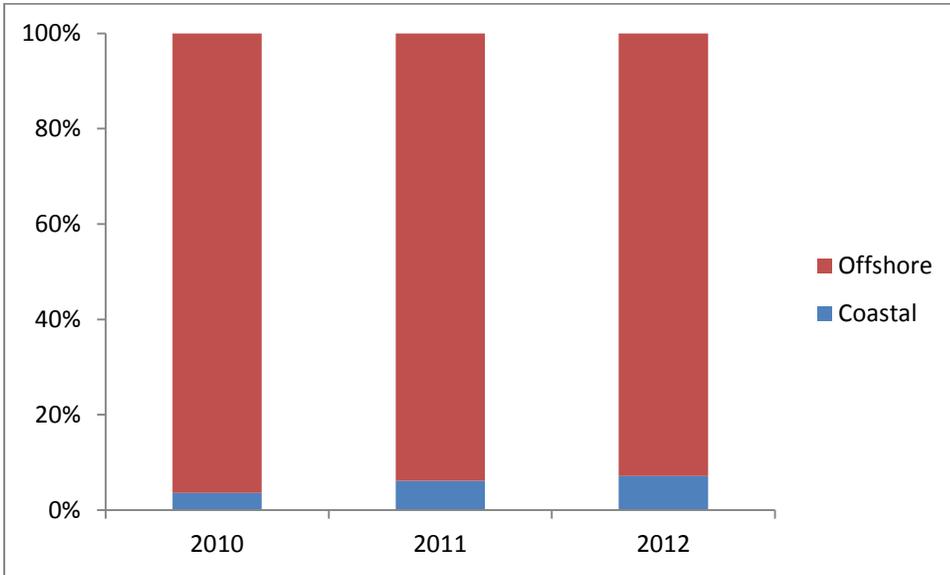


Figure 4: Relative contribution of offshore and coastal fisheries to the total billfish production

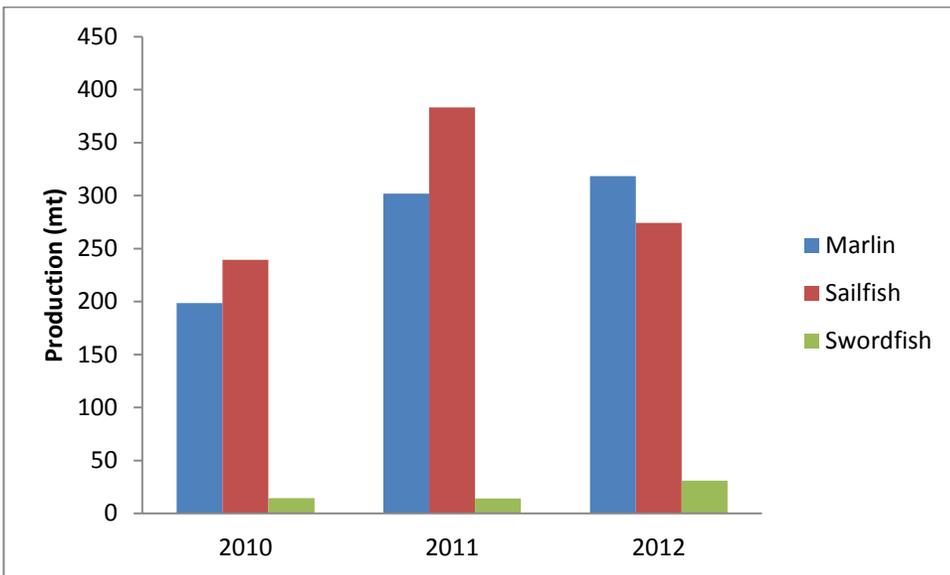


Figure 5: Landing of billfish by species in the coastal fisheries

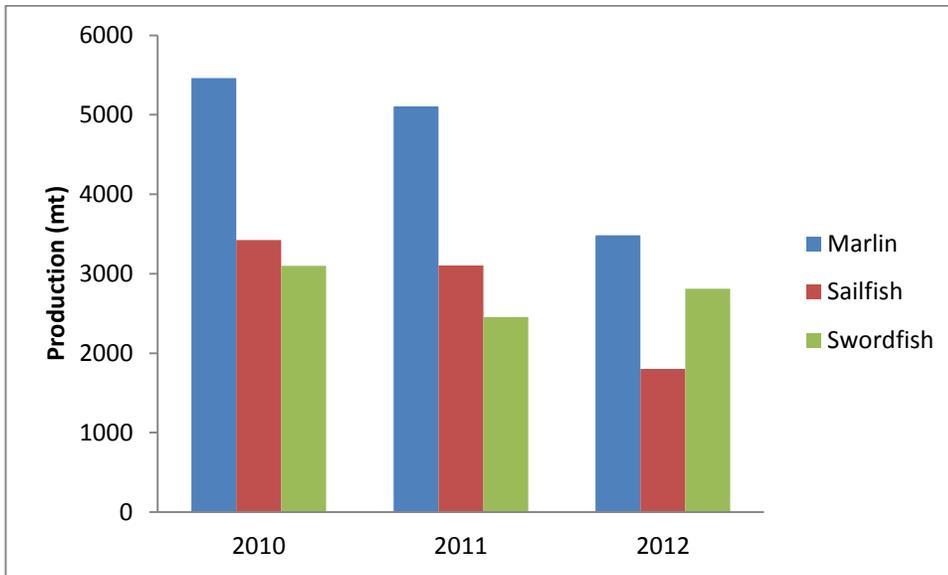


Figure 6: Landing of billfish by species in the offshore fisheries

Species Composition

Marlins are the dominant species group in the total billfish catch. However, the catch of marlins by species is often poorly recorded, being lumped together in to single category, as the fish are quite large often beheading and finning is done onboard. Biology of billfish is poorly studied due to lack of a targeted fishery. Single species of sailfish and swordfish are found in billfish catches. A rare occurrence of another billfish species named as shortbill spearfish (*Tetrapturus angustirostris*) has been reported in the commercial landings in Sri Lanka (Joseph and Amarasiri; 1986)

At present marlin showed still dominating in the total billfish landings. It is around 46% (Figure 7). Black marlins are dominant in the marlin catch and it was around 52.6% of the total marlin production, whereas the contribution of striped marlin is very low and it was less than 1 % to the total marlin production.

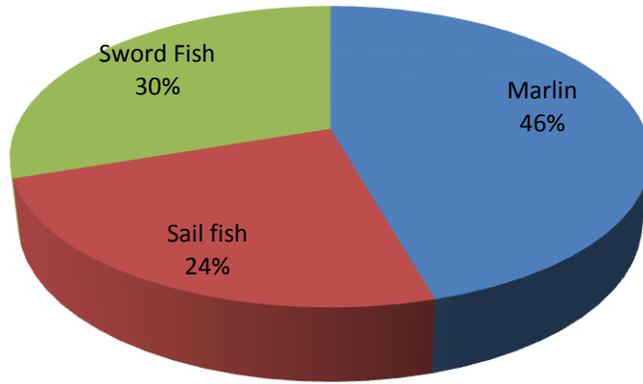


Figure 7: Species wise contribution in the total billfish production in 2012

Conclusion and Recommendations

Relatively a higher billfish catch has been reported on offshore fishery over the past years. This is due to the expansion of offshore fishery and also application of new technologies. It was observed that biological information on billfish such as growth, maturation, sex is still insufficient for detailed studies. At present maintenance of logbook has gradually been increased in Sri Lanka, which can be used to obtain better data on catch and effort in due course. No details about the positions and distribution of billfish fisheries in the present context, but can also be obtained by log books in coming years. Since marlins have not been identified to the species level relative proportions of their contribution is still vague. Thus assistance has to be given to the samplers in identification of these species.

Since ecotourism could be developed on establishing sport fishing for billfish, Sri Lanka would look forward to develop such activity along with the main frame of the tourism development plan.

References

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Appendix 1

Classifications of multiday fishing vessels in Sri Lanka operate for tuna and tuna like species.

Boat category	Boat Description
UN2B	8.8 – 9.8 m (28’ -34’) FRP or wooden, Inboard engine(single)-40 HP Insulated fish hold – no gear hauler ,may have GSP/sounder/fish finder
UN3A	9.8 -12.2 m (34’ - 40’) FRP or wooden. Inboard engine (single) – 60 HP Insulated fish hold and may have gear - hauler/GSP/sounder/fish finder
UN3B	12.2 m - 15.2m (40’ – 50’) FRP or wooden. Inboard engine (single) – 60 + HP. Insulated fish hold and may have freezer facilities. Gear Hauler/GSP/sounder/fish finder
UN4	15.2 -18.3 m (50’- 60’) Inboard engine, fish storage facility ,may have RSW or CSW or freezing facility,

	Gear hauler, GPS, echo –sounder /fish finder, radio communication
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